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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.				
10/632,590	08/01/2003	Roland Dilley	H0004601	4316				
7590 03/31/2005								
Ephraim Starr, Division General Counsel Honeywell International Inc. Suite #200 23326 Hawthorne Boulevard Torrance, CA 90505		<table border="1"> <tr> <th>EXAMINER</th> </tr> <tr> <td>MCKINNON, TERRELL L</td> </tr> </table>			EXAMINER	MCKINNON, TERRELL L		
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		<table border="1"> <tr> <th>ART UNIT</th> <th>PAPER NUMBER</th> </tr> <tr> <td>3743</td> <td></td> </tr> </table>			ART UNIT	PAPER NUMBER	3743	
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3743								
DATE MAILED: 03/31/2005								

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/632,590	DILLEY ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Terrell L Mckinnon	3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-9 and 11-14 is/are rejected.
- 7) ☒ Claim(s) 6, 7 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Drawings***

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 8, 9 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritland et al. (U.S. 3,759,319) in view of Frey et al. (U.S. 2,768,814).

Ritland discloses a heat exchanger comprising:

- a core member including a plurality of hot-side fluid or gas transport passages;

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- a plurality of cold-side fluid or gas transport passages, wherein the hot-side and cold-side fluid or gas transport passages being in contact with one another to permit conductive heat transfer;
- a hot-side manifold (29) and a cold-side manifolds, wherein the hot-side manifold comprises a dividing wall (30) to divide the hot-side manifold into two unequal fluid or gas portions;
- the smaller (35) of the unequal fluid or gas portions receives the first fluid or gas from the plurality of hot-side fluid or gas transport passages and wherein the Larger (31) of the unequal fluid or gas portions directs the first fluid into the plurality of hot-side fluid or gas transport passages;
- the hot-side manifold comprises an inlet (33) to receive the first fluid or gas into the heat exchanger and an outlet that allows the first fluid or gas to exit the heat exchanger;
- a manifold (29) having a dividing wall (30) to divide the manifold into an inlet fluid or gas portion and a smaller outlet fluid or gas portion;
- an inlet associated with the inlet fluid or gas portion having a centerline and a cross-sectional flow area;
- an outlet associated with the smaller outlet fluid or gas portion;
- the inlet comprises an inlet for gas and the outlet comprises an outlet for the gas;

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- the gas enters the inlet at a high temperature and wherein the gas exits the outlet at a lower temperature;
- the gas enters the inlet at a low density and wherein the gas exits the outlet at a higher density;
- the outlet comprises a cross-sectional flow area and wherein the cross-sectional flow area of the inlet exceeds the cross-sectional flow area of the outlet.

Ritland's invention fails to disclose a flow director integral to the hot-side manifolds to change the flow direction of the first fluid or gas passing through the Larger of the unequal fluid or gas portions; at least two members disposed at non-orthogonal angles to the centerline of the inlet; the flow director comprises at least two members to direct the fluid or gas substantially lengthwise in the Larger of the unequal fluid or gas portions of the hot-side manifold; the at least two members comprise bars that act to reduce Localized stress concentrations of the hot-side manifold proximate to an inlet; the flow director is integral to the hot-side manifold via welding; and the at least two members comprise bars that act to reduce Localized stress concentrations of the manifold proximate to the inlet.

3. However, Frey teaches a flow director (12, 31 and 33 Figs. 21b and 21c) integral to the hot-side manifolds to change the flow direction of the first fluid or gas passing through the Larger of the unequal fluid or gas portions; at least two members disposed at non-orthogonal angles to the centerline of the inlet; the flow director comprises at least two members to direct the fluid or gas substantially lengthwise in the Larger of the

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unequal fluid or gas portions of the hot-side manifold; the at least two members comprise bars that act to reduce Localized stress concentrations of the hot-side manifold proximate to an inlet; the flow director is integral to the hot-side manifold via welding; and the at least two members comprise bars that act to reduce Localized stress concentrations of the manifold proximate to the inlet.

Given the teachings of Frey, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the heat exchanger of Ritland with a flow director integral to the hot-side manifolds to change the flow direction of the first fluid or gas passing through the Larger of the unequal fluid or gas portions; at least two members disposed at non-orthogonal angles to the centerline of the inlet; the flow director comprises at least two members to direct the fluid or gas substantially lengthwise in the Larger of the unequal fluid or gas portions of the hot-side manifold; the at least two members comprise bars that act to reduce Localized stress concentrations of the hot-side manifold proximate to an inlet; the flow director is integral to the hot-side manifold via welding; and the at least two members comprise bars that act to reduce Localized stress concentrations of the manifold proximate to the inlet.

Doing so would provide a thermally efficient means of uniformly distributing the fluid within the heat exchanger for heat transfer.

***Allowable Subject Matter***

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4. Claims 6, 7 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references cited on the USPTO 892 discloses related limitations of the applicant's claimed and disclosed invention.

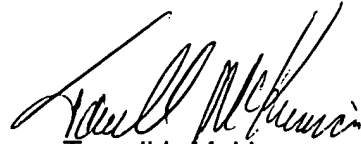
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terrell L Mckinnon whose telephone number is 571-272-4797. The examiner can normally be reached on Monday -Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett can be reached on 571-272-4791. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read "Terrell L. McKinnon". The signature is fluid and cursive, with the first name "Terrell" and last name "McKinnon" clearly distinguishable.

Terrell L. McKinnon  
Primary Examiner  
Art Unit 3743  
March 21, 2005